

### Abstract of the Disclosure

A sensor network provides the ability to detect, classify and identify a diverse range of agents over a large area, such as a geographical region or building. The network possesses speed of detection, sensitivity, and specificity for the diverse range of agents.

- 5 Different functional level types of sensors are employed in the network to perform early warning, broadband detection and highly specific and sensitive detection. A high probability of detection with low probability of false alarm is provided by the processing of information provided from multiple sensors. A Bayesian net is utilized to combine probabilities from the multiple sensors in the network to reach a decision regarding the
- 10 presence or absence of a threat. The network is field portable and capable of autonomous operation. It also is capable of providing automated output decisions.

TOP SECRET